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 (21) International Application Number: PCT/TR98/00027 (22) International Filing Date: 18 December 1998 (18.12.98) (30) Priority Data: 98/01760 7 September 1998 (07.09.98) TR (71)(72) Applicant and Inventor: DEGIRMENCI, Ahmet [TR/TR]; A. Aydin Cad. No: 11 / B, Aktepe Mah., 35070 Gaziemir-Izmir (TR).		 (81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>	
 (54) Title: ARTIFICIAL PAVING STONES WITH NATURAL APPEARANCE, FABRICATED IN MOULDS MADE OF NATURAL STONES (57) Abstract For the basis of roads, quarters and public squares increasing in number and widening day by day, as the laying material; just as in the previous years, it is impossible to grow material produced from natural stone by chipping both for the raw material and cost. Basic concrete pieces of various geometric shapes used to substitute these set up a nostalgia pollution in historical places where they have been laid. With an aim to prevent this unconscious destroying increasing in all countries, 5-20 each has been chosen among the used ones if available, if not among the new ones produced by breaking chipping method as a model, after retouching them as required in order to supply the used stone appearance, using the templates supplied from these model stones, and also by using concrete mortar and mixture mortar; it is the method of supplying the said template and production for the natural stone appearance set up when laid over the ground and for the manufacture of these stones.			

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**ARTIFICIAL PAVING STONES WITH NATURAL APPEARANCE,
FABRICATED IN MOULDS MADE OF NATURAL STONES**

The Field of The Invention;

5 The present invention is about, 5-20 each has been chosen among the used ones if available, if not among the new ones produced by breaking chipping method as a model, after retouching them as required in order to supply the used stone appearance, using the templates supplied from these model stones, and also by using concrete mortar and mixture mortar; it is the method of supplying the
10 said template and production for the natural stone appearance set up when laid over the ground and for the manufacture of these stones.

Roads, quarters and public squares were used to be covered by natural laying material produced by breaking-chipping of natural stones in previous years.

Nowadays, by the increase of population, these places have been widened
15 and also increased in number, they put to become like a concrete by simple templates of various geometric shapes being filled by concrete mortar.

Even through the maintenance, repair and extension procedures of roads, quarters, public squares and likely places having nostalgia view and importance; perhaps because there are no legislation having effect about the subject; and perhaps because the pavement laying material's cost is high when supplied by
20 breaking chipping method from natural stones; with a point of view both to recover the work with a cheaper cost and to try not to destroy the nostalgia appearance of these places, quarters and public squares having hundred years of history are destroyed by being covered with organised geometric design laying
25 material as if to shout out "I am a product of modern technology and time".

Background of The Invention;

The cost of chipped pavement stone is high and it has got difficulties in the supply. Even if it had been found and laid besides all

these difficulties, it will easily be understood that they have been newly laid without being used by people for long years and being defected a little bit. Covering material made up of concrete mortar, leads to both nostalgia pollution and being concrete to the places where it has been laid.

5 In places where new covering has been performed, between the organised geometric shape laying; it is impossible to understand why a few of natural chipped stones pulled out during repair are put.

Human beings have become more civilised day by day besides big wars, big epidemics and big Acts of God. Every person thinks that the ones before him, 10 namely his ancestors have lived in primitive environment, in primitive conditions and continued their life in distress. The places they have lived and the goods they have used should be cared about as a piece of nostalgia and not to be destroyed or polluted.

Laying performed by simple concrete pieces covered to the historical 15 quarters, roads and public squares, is the first obliged of nostalgia pollution even if in geometric shapes.

From this point of view, in order to avoid this pollution, it is impossible to grow stone produced by chipping natural stone to roads, quarters and public 20 squares increasing every day in number both as a raw material and cost. In such a condition, to be used for the place of the said natural stones, it is needed to be found a laying material not going to be differentiated from these, being cheap and not being able to be understood that they are new.

Mainlines of The Invention;

25

1. The preparation of upper surface;

5-20 each used natural chipped pavement stone, in enough number, each of them upper surface rectangular appearance being different from each other are chosen as model. If used stones are not available, without defecting the natural 30 appearance of the found stones, retouching has been performed in order to give

the appearance of used stone to the upper surfaces of them. This retouching procedure is not as giving a circle shape to the upper surface of the stone. The strong corners being present at the time of breaking, together with rough parts, as if being defected since being used for years and without corners or strict shapes, 5 without defecting the natural upper surface o the stone, it is the slighting of the middle part and giving a slight circular shape to the corners.

If needed intensively sharp pointed and rough places first chipped by again a sharp chisel and by a hammer. After that using mobile spiral stoning, sharp corners are shaped by rough and neat emery respectively, sharp corners are given 10 the circle shape. At last by water emery, the upper surface is made slight wholly.

2. The preparation of Upper Surface Template from the Model;

From the upper surface model prepared, by the procedure of pouring either steel or iron material, or by small hammer hits, of the iron plates having the 15 thickness of 5-10mm that are softened by heating, the upper surface template has been prepared by them being put over the model and given shape by hammer hits. The back of the surface has been supported by iron and metal welding in order to increase the resistance. The surrounding of the shaped plate is then cut.

20 3. Preparation of Side Templates;

The sides of the template is vertical to the down surface. The shape of the upper cross section of the box part set from the template sides, is as the same of the stone used as model upper surface. The height of the sides templates, namely the sides of the template is approximately 3-19 cms and prepared from lame iron 25 of about 10 mms thick.

The procedures of preparing upper surface model, preparing upper surface template from the model and preparing side templates, are performed one by one for every stone model. The templates prepared are adopted to machines producing square laying materials or likely machines, it has been started to laying material

production of used natural breaking pavement stone appearance, having nearly the same contents with organised geometric shaped pavement laying material but not producing a concrete pollution or nostalgia pollution.

5 During production, while the templates are filled, as if in square shape laying material, besides the normal concrete mortar, a second mortar has been prepared from hardening material, for example, powders from strong structure stones or 0, 1, 2, 3 numbers mosaic material. This mortar has been filled in the template for natural design upper surface as a layer with the thickness of at least 1-2 cms.

10 During the laying procedure, the same dimensions of upper surface should be put side by side. 10-15 each stones having different upper surface dimensions, should be placed randomly. By using stones of different measures, motif laying can be performed circles of small to one bigger, and semicircles or cloverleaf and likely shapes can be performed.

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CLAIMS

1. Natural appearance, used pavement laying material motif, is a template preparation and production method, for to be laid to the grounds of historical quarters, roads and public squares, with templates from models of 5-20 each used or giving used appearance by retouching, the material to be produced by concrete
5 mortar or mixture mortar, when laid to a ground, used natural breaking stone motif and for the preparation of this material, by the preparation of the said template production method.
- 10 2. Natural appearance pavement laying material motif as in Claim 1, preparation of its template and production method, its special characteristic is that the upper surfaces of the stones chosen to be models are not in the same rectangular shape.
- 15 3. As in Claims 1 and 2, natural appearance pavement laying material, preparation of its template and production method, its special characteristic is that, the stones being chosen as templates are defected like have been used since long years.
- 20 4. As in Claims 1, 2 and 3, natural appearance pavement laying material, preparation of its template and production method, its special characteristics is that, the stones chosen as the template model, for example 5-20 each stones, when not defected to the required degree, the used appearance is able to be given by a retouching process, and this retouching process is not directly to give a circular shape, it is just to give a slight circular shape to the corners and sharpened ends and give a little bit of defected appearance and this procedure is going to be performed without giving harm to the natural appearance of the stone itself.
25
5. As in Claims 1, 2, 3, and 4, natural appearance pavement laying material motif, preparation of its template and production method, and its special characteristic is

that; the retouching to be performed to the stones to be used as model, first the sharpened ends are going to be plated by a chisel and a hammer, and then by mobile spiral stoning, the respectively put rough and neat marble emery the hard and sharpened surfaces are going to be rounded and at the last stage using a water 5 emery the whole upper surface of the stone is going to be made polished.

6. As in Claims 1, 2, 3, 4 and 5, natural appearance pavement laying material motif, preparation of its template and production method, and its special characteristic is that; from the prepared upper surface model, by pouring 10 procedure from steel or metal material, or by giving small hammer hits, the iron plate is going to be heated as to give an easy shape, is put over the prepared material and will be shaped by hitting with hammer and it will be cut from around after the shaping procedure has been ended, so that the upper template will be ready.

15 7. As in Claims 1, 2, 3, 4, 5 and 6, natural appearance pavement laying material motif, preparation of its template and production method, and its special characteristic is that; the sides o the template are vertical to the down surface, the box shape formed by the sides of the template the upper cross-section shape, is 20 the same as the one used as the model stone, the side height being 4-18 cms, all the layers in template preparation procedure will be performed for each stone one by one, and the prepared templates will be adopted to square laying material production machine or likely machines and so natural breaking stone appearance pavement laying material will be produced.

25 8. As in Claims 1, 2, 3, 4, 5, 6, and 7, natural appearance pavement laying material motif, preparation of its template and production method, and its special characteristic is that; while the templates are filled during production, besides normal concrete mortar, from hardener material, for example powder gained from

hard structure stones, 0, 1, 2, 3 number mosaic material will be mixed with concrete to prepare a second mortar as layer at least 1 - 2 cms thick and will be filled to the template for natural design upper surface.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/TR 98/00027

A. CLASSIFICATION OF SUBJECT MATTER

IPC⁷: E 01 C 5/06; E 01 C 5/22; B 23 B 7/00; B 28 B 7/34

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC⁷: E 01 C; B 28 B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, EPODOC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 3740682 A (Donath Gabriele) 15. Jun. 1989 (15. 06. 1989); whole document.	1, 6-8
X	DE 3334396 A (Mast Anna) 11. Apr. 1985 (11.04.1985); claim 1.	8
A	DE 19534592 A1 (Bau Dieter) 13. Mär. 1997 (13. 03. 1987); claim 1.	8
X	GB 2306130 (K Wah) 30. Apr. 1997 (30. 04. 1997); claims 1-11.	5
A	FR 2723026 A1 (Berlotti Jean Vicent) 2. Feb. 1996 (02. 02. 1996); claims 1 and 2.	4,5

Further documents are listed in the continuation of Box C.

See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
04 November 1999 (04.11.99)	12 November 1999 (12.11.99)
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Document de brevet cité dans le rapport de recherche	Date de publication	Membre(s) de la famille de brevets	Date de publication
DE A 3740682		DE A1 3740682 DE C2 3740682	15-06-1989 20-09-1990
DE A 3334396		keine - none - rien	
DE A1 19534592	13-03-1997	keine - none - rien	
GB 2306130		keine - none - rien	
FR A1 2723026	02-02-1996	FR B1 2723026	20-12-1996